

REMARKS

Claims 1-25 are pending in the application after this amendment. In the following sections of the Amendment the rejections set forth by the Examiner in the February 27, 2007 Office action are addressed. These rejections are respectfully traversed, and detailed arguments are set forth below.

All of the independent claims (claims 1, 12, 16, 20, 24, and 25) substantially claim a rounded edge intersection between an energy application region and a tissue protecting region. (Specifically, the claimed features are: the “a rounded edge intersection between said energy application region and said tissue protecting region” (claim 1); “a thin leading edge formed at the anterior portion of a rounded edge intersection between said energy application region and said tissue protecting region” (claims 12,16, and 25); “said energy application head further comprising a rounded thin leading edge at the anterior intersection of said energy application region and said tissue protecting region” (claim 20); and “inserting a thin leading edge formed at the anterior portion of a rounded edge intersection between an energy application region and a tissue protecting region of an energy application head of said disc refurbisher” (claim 24).)

All of the independent claims (claims 1, 12, 16, 20, 24, and 25) substantially claim that the tissue protecting region is sloped from the thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application to said at least one intervertebral disc. (Specifically, the claimed features are: the “tissue protecting region being sloped from said thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application to said at least one intervertebral disc” (claim 1); “said tissue protecting region being sloped away from said energy application region and from said thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application to said at least one intervertebral disc” (claims 12,16, and 25); “said tissue protecting region sloped away from said energy application region and to a thick region for lifting vulnerable tissues away from a site of energy application to said at least one intervertebral disc” (claim 20);

and "lifting vulnerable tissues using said tissue protecting region, said tissue protecting region being sloped away from said energy application region and from said thin leading edge to a thick region" (claim 24).) This feature is clearly shown, for example, in FIG. 6 of applicant's application. Further, this feature is discussed in the original application. For example, beginning at page 8, line 2, the following description can be found: "Significantly, the energy application head is preferably wedge-shaped and has a thin insertion edge sloped to a thick region for lifting vulnerable tissues away from a site of energy application to the at least one intervertebral disc." Please note that applicant has also defined the "thin leading edge," for example, as "at least part of said rounded edge intersection" (claim 1) or "the anterior portion of a rounded edge intersection between said energy application region and said tissue protecting region" (claim 12).

The Examiner rejected claims 1-23 under 35 USC §102(b) as being anticipated by U.S. Patent No. 5,569,242 to Lax et al. (the "Lax reference"). As the independent claims all include at least one claimed limitation that is not taught or suggested by the Lax reference, applicant respectfully submits that the independent claims are allowable. Further, applicant respectfully submits that the claims depending from the independent claims are allowable for the same reasons as well as for the specific structure claimed therein.

Before commenting on the Examiner's rejection, applicant would like to discuss several of the figures in the Lax reference upon which the Examiner has relied. First, FIGS. 2 and 3 are plan and side views of a distal end 18 of the electrode 14 with all edges radiused according to the invention. The Lax reference does not provide any significant disclosure as to the composition of the distal end 18 - we only know that it is the distal end of the electrode 14. The electrode 14 shown in the other figures is elongate and, since the disclosure states only that the embodiment of FIGS. 2 and 3 is the distal end, it stands to reason that the electrode 14 would still be elongate. There is nothing in the drawings or the text of the Lax reference to teach or suggest that the distal end 18 of FIGS. 2 and 3 has any type of tissue protecting region. It also would not make sense to provide a tissue protecting region on the top of the disk shown in

FIGS. 2 and 3 since the electrode 14 continues (as it is elongate). Second, FIGS. 6-8 show views of the distal end of the electrode of the apparatus of FIG. 5 in which an electrode with a steering wire 34 positioned on the flat formed on the exterior of electrode 14 so that the electrode distal end 18 is deflected. There is nothing in the drawings or the text of the Lax reference to teach or suggest that the distal end 18 of FIGS. 6-8 has any type of tissue protecting region. The Examiner appears to suggest that the embodiment of FIG. 7 is domed shaped, but this does not appear to be relevant (and applicant specifically does not admit that it is accurate) because there is no tissue protecting region. Third, FIG. 9 shows an embodiment with an electrical insulation layer 38 formed on a back side of electrode 14. The electrical insulation layer 38 is intended to minimize damage to tissue areas that are not treated and the Examiner appears to equate the electrical insulation layer 38 to a tissue protecting region. There isn't, however, a "rounded edge intersection between said energy application region" and the electrical insulation layer 38. Further, the electrical insulation layer 38 is not "sloped from said thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application." Fourth, FIG. 10 shows an RF electrode structure with an insulating housing surrounding a portion of an electrode, and a cuff 50 surrounding the insulating housing 46 and FIG. 11 is a block diagram of a fluid control system useful with the electrode structure of FIG. 10 that shows that the cuff 50 does not extend to the distal end of the electrode (the structure shown at the distal end is not labeled). The Examiner does not make clear whether it is the cuff 50 or the insulating housing 46 that he equates with the claimed tissue protecting region. Neither the cuff 50 nor the insulating housing 46, however, have a "rounded edge intersection" with the electrode 14. And applicant does not see a thin leading edge in either of these drawings.

Applicant has reviewed the Examiner's arguments with respect to the Lax reference and, even if taken as completely accurate (which applicant is specifically not admitting), the Lax reference still does not teach or suggest the claimed invention because at least one claimed limitation is not taught or suggested by the cited references and, therefore, the Examiner has not met his burden of providing a prima

facie case of anticipation. The Examiner does not assert that the Lax reference teaches or suggests the claimed feature of a rounded edge intersection between the energy application region and the tissue protecting region. The Examiner does not assert that the Lax reference teaches or suggests the claimed feature of at least part of the rounded edge intersection being a thin leading edge. Applicant further respectfully submits that the Lax reference does not teach or suggest these claimed features. The Examiner relies on FIGS. 2 and 3 to show "rounded," but even if the edges are rounded (which applicant specifically does not admit), it does not appear to be a rounded edge intersection between an energy application region and a tissue protecting region since these figures do not show a tissue protecting region. The Examiner states that "figures 9 and 10, among others, expressly teach the use of insulation materials and other configurations in order to 'minimized damage to tissue areas that are not treated. . . .'" The Examiner, however, does not identify which elements he equates to the claimed tissue protecting region. Regardless of which elements applicant could arguably equate to the claimed tissue protecting region (for purposes of analysis only), applicant was not able to find "a rounded edge intersection between said energy application region and said tissue protecting region." The Examiner does not assert that the Lax reference teaches or suggests the claimed feature of the tissue protecting region is sloped from the thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application to said at least one intervertebral disc. Applicant further respectfully submits that the Lax reference does not teach or suggest this claimed feature. The Examiner does state that the "supporting portion of the device that couples to the handle would lift tissue away from the applicator face," but the figures in which the device is in use (e.g. FIGS. 21 and 23) do not show this supporting portion even entering the body. Regardless of which elements applicant could arguably equate to the claimed tissue protecting region (for purposes of analysis only), applicant was not able to find a "tissue protecting region being sloped from said thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application." These and other claim limitations are not taught or suggested by the Lax reference.

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Accordingly, the claims containing these limitations and the claims dependent thereon should be allowable over the Lax reference. Applicant, however, would be willing to discuss alternative claim language that clarifies the distinctions set forth above.

The Examiner rejected claims 1, 4-13, 16, 17, 20, 21, 24, and 25 under 35 USC §102(b) as being anticipated by U.S. Patent No. 6,929,640 to Underwood et al. (the "Underwood reference"). As the independent claims all include at least one claimed limitation that is not taught or suggested by the Underwood reference, applicant respectfully submits that the independent claims are allowable. Further, applicant respectfully submits that the claims depending from the independent claims are allowable for the same reasons as well as for the specific structure claimed therein.

Applicant has reviewed the Examiner's arguments with respect to the Underwood reference and, even if taken as completely accurate (which applicant is specifically not admitting), the Underwood reference still does not teach or suggest the claimed invention because at least one claimed limitation is not taught or suggested by the cited references and, therefore, the Examiner has not met his burden of providing a *prima facie* case of anticipation. The Examiner does not assert that the Underwood reference teaches or suggests the claimed feature of the tissue protecting region is sloped from the thin leading edge to a thick region for lifting vulnerable tissues away from a site of energy application to said at least one intervertebral disc. Applicant further respectfully submits that the Underwood reference does not teach or suggest this claimed feature. The Examiner equates the Underwood "non-active" insulating side 521" with applicant's claimed tissue protecting region. However, the Underwood "non-active" insulating side 521" is flat and it does not slope. The embodiments to which the Examiner refers (FIGS. 20 and 25-28) are directed to a planar ablation probe with a planar distal portion. If the Examiner is pointing to the concave area (not labeled but located above and to the right of reference number 420 in FIG. 28), it is behind the site of energy application. Also, the concave area does not intersect with the claimed energy application region. For example, there is no "rounded edge intersection" between the energy application region (which is on the top surface of the support

member) and the concave area. Further, the concave area would lift towards the site of energy application (which is on the top surface of the support member), not away from the site of energy application. Finally, applicant would like to point out that the Examiner's statement that "As can be seen from Figure 28, the working end tapers to the thin rounded end," does not provide a teaching or suggesting of the claimed "rounded edge intersection between said energy application region and said tissue protecting region" (see claims 1, 12, 16, 20, 24, and 25). Applicant further respectfully submits that the Underwood reference does not teach or suggest this claimed feature. At most (and applicant is specifically not admitting), FIG. 28 shows the support tongue 420 having an end surface and a bottom surface that do not meet at a perfect right angle. The Underwood "non-active' insulating side 521" and the Underwood "active electrodes 416," however, do not intersect at a rounded edge. These and other claim limitations are not taught or suggested by the Underwood reference. Accordingly, the claims containing these limitations and the claims dependent thereon should be allowable over the Underwood reference. Applicant, however, would be willing to discuss alternative claim language that clarifies the distinctions set forth above.

As neither the Lax reference nor the Underwood reference teach or suggest at least one feature claimed in the independent claims, applicant respectfully requests these references do not anticipate the independent claims or the claims dependent on the independent claims. Accordingly, applicant respectfully submits that the pending claims are allowable.

Applicant has chosen not to present arguments specific to each of the features in the independent claims or to the features in the pending dependent claims, but reserves the right to present arguments directed thereto in future communications.

Applicant's representative attempted to reach the Examiner on several occasions and left several messages, but was unable to reach the Examiner to discuss the February 27, 2007 Office action. Applicant's representative had hoped to determine which features of the cited references the Examiner was equating to the claimed elements. Applicant's representative hopes that the Examiner will not penalize

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applicant with a final Office action if the next Office action is only to clarify the present rejections. Finally, as mentioned above, applicant would be willing to discuss alternative claim language to help distinguish over the cited prior art.

The Examiner is requested to reexamine the application, to allow the claims, and to pass the application on promptly to issue.

A Petition for Extension of Time for three months is enclosed herewith. Please charge Deposit Account No. 50-2115 for any additional fees that may be required.

Respectfully submitted,



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